I Claim:

A method for producing basalt fibers, comprising the steps of:

preheating basalt;

charging the preheated basalt into a melting furnace;

heating the basalt in said furnace to form a glass mass;

stabilizing the glass mass in a stabilizing section of the melting furnace until it reaches a fiber manufacturing temperature;

introducing the stabilized glass mass into a feeder;

further stabilizing the glass mass in the feeder to obtain a glass mass having the composition'

$$\frac{\text{Al}_2\text{O}_3 + \text{SiO}_2}{\text{CaO} + \text{MgO}} \ge 3 \qquad \frac{\text{FeO}}{\text{Fe}_2\text{O}_3} \ge 0.5$$

$$\frac{2\text{Al}_2\text{O}_3 + \text{SiO2}}{2\text{Fe}_2\text{O}_3 + \text{FeO} + \text{CaO} + \text{MgO} + \text{K}_2\text{O} + \text{Na}_2\text{O}} > 0.5$$

$$\frac{2Al_2O_3 + SiO2}{2 Fe_2O_3 + FeO_1 + CaO_2 + MgO_2 + K_2O_2 + Na_2O_2} > 0.5$$

forming fibers by pulling the further stabilized glass mass from spinnerets which receive glass from the feeder.

A method according to claim 1 wherein the preheating step heats the basalt to a temperature of 150 - 900 °C.

A method according to claim 1 wherein the temperature of the glass mass from which the 3. fibers are pulled is t melt +(50 - 250 °C), where t melt is the basalt melting temperature.

- A method according to claim 3 wherein the preheating step heats the basalt to a temperature of 150 - 900 °C.
- 5. A method according to claim 1, wherein the glass mass is stabilized in the feeder at a temperature of 1250 1450 °C.
- 6. A method according to claim 5 wherein the preheating step heats the basalt to a temperature of 150 900 °C.
- 7. A method according to claim 6 wherein the temperature of the glass mass from which the fibers are pulled is t ^{melt} +(50 250 °C), where t ^{melt} is the basalt melting temperature.

Apparatus for producing basaltic fibers, comprising a basalt weigher;

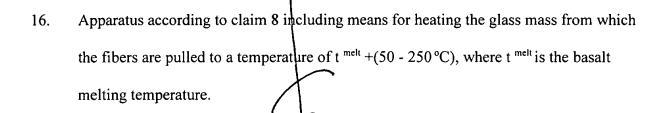
Amelting furnace having a firing space and a stabilizing section;

a heat exchanger connecting the basalt weigher to the firing space for preheating basalt which is charged into the melting furnace;

a feeder which receives molten glass from the melting furnace, said feeder being connected by the stabilizing section to the firing space; spinnerets which receive molten glass from the feeder; and

mechanisms which pull fibers from the spinnerets.

- 9. Apparatus according to claim 8 wherein the stabilizing section has a height which is 0.4
 0.6 of the height of the height of the firing space.
- 10. Apparatus according to claim 9 wherein the heat exchanger is operable to preheat the basalt to a temperature of 150-900°C.
- 11. Apparatus according to claim 9 including means for heating the glass mass from which the fibers are pulled to a temperature of t ^{melt} +(50 250 °C), where t ^{melt} is the basalt melting temperature.
- 12. Apparatus according to claim 9 including means for maintaining glass mass at a stabilizing temperature which is 1250-1450°C.
- 13. Apparatus according to claim 8 wherein the heat exchanger is operable to preheat the basalt to a temperature of 150-900°C.
- 14. Apparatus according to claim 13 including means for heating the glass mass from which the fibers are pulled to a temperature of t melt +(50 250 °C), where t melt is the basalt melting temperature.
- 15. Apparatus according to claim 13 including means for maintaining glass mass at a stabilizing temperature which is 1250-1450°C.



- 17. Apparatus according to claim 8 including means for maintaining glass mass at a stabilizing temperature which is 1250-1450°C.
- Apparatus according to claim 17 including means for heating the glass mass from which the fibers are pulled to a temperature of t met + (50 250 °C), where t melt is the basalt melting temperature

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